Power feasibility of a low power consumption solar tracker

ABSTRACT

This paper discusses on the generated power and the power consumption of an open-loop time and date based sun positioning solar collector system under three weather conditions; sunny and clear day, cloudy day and heavy overcast and rainy day under Malaysian tropical climate at location E100°11ô, N6°26ô, The two-axes tracking system used a Programmable Logic Controller (PLC) to maneuver a photovoltaic solar module based on 10° altitude angle tracking and 1° azimuth angle tracking. The daily percentage of power consumed during a clear and sunny day from the tracking motors and controller is 0.05% and 5.84%, respectively. Overall, the system consumed 5.89% of the total generated power.

Keyword: Dual-axes; Solar tracking; Open-loop system